

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 April 2001 (19.04.2001)

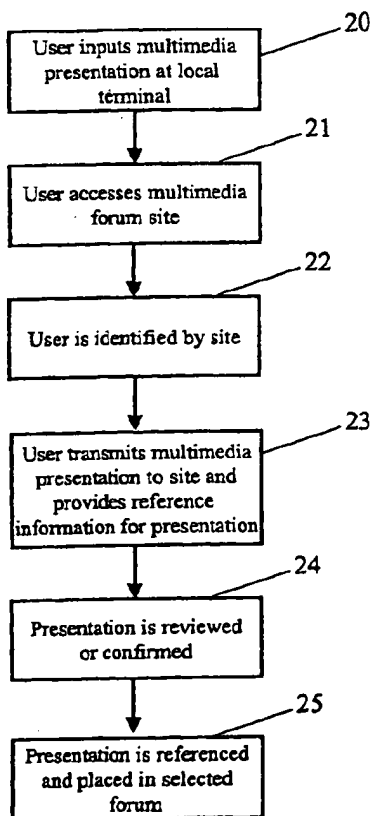
PCT

(10) International Publication Number
WO 01/27773 A1

- (51) International Patent Classification⁷: G06F 13/00, 17/30, 17/60
- (21) International Application Number: PCT/US00/28070
- (22) International Filing Date: 12 October 2000 (12.10.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/158,364 12 October 1999 (12.10.1999) US
09/496,359 2 February 2000 (02.02.2000) US
- (71) Applicant: NORTH AMERICAN BUSINESS SERVICES, L.L.C. [US/US]; Suite 202, 146 Hekili Street, Kailua, HI 96734 (US).
- (72) Inventors: BULL, Devin; Unit A, 566 Kawanui Street, Kailua, HI 96734 (US). HARVEY, John; 7225 Lincoln Avenue, Carmichael, CA 95608 (US).
- (74) Agents: KELBER, Steven, B. et al.; Piper Marbury Rudnick & Wolfe LLP, 1200 Nineteenth Street, N.W., Washington, DC 20036-2412 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European

[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR NETWORK MULTIMEDIA FORUM



(57) Abstract: A method and system for a virtually unlimited multimedia forum on a single site on a network (21), such as the Internet or an intranet, for storing and accessing received user multimedia presentations. The invention thus allows users to provide a wide range of personal and other information for access and retrieval by others at this single location (23). The invention includes a networked site (21) and associated database or databases for storing received user multimedia presentations in electronic or digital format, such as video presentation, text files of data, images, and sound recordings. The stored multimedia presentations are categorized, and user access is provided based on departments or other identifying information (25).

WO 01/27773 A1



patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *With international search report.*

- 1 -

METHOD AND SYSTEM FOR NETWORK MULTIMEDIA FORUM

This application claims priority to applicant's copending U.S. Provisional Patent Application Serial No. 60/158,364 of Devin BULL et al. titled "METHOD
5 AND SYSTEM FOR NETWORK MULTIMEDIA FORUM" filed October 12, 1999.

FIELD OF THE INVENTION

This invention relates to a method and system for a network based user forum, and in particular to a method and system for providing individual users with
10 capabilities to present a high volume of multimedia information within a broad group of fora at a single site on a network, such as a website on the Internet or an intranet, allowing such features as real time opinion and other information exchange in a multimedia format.

15 BACKGROUND

There is a natural inclination or desire among many individuals to seek a forum for presenting personal or professional information, to discuss this information, or to feel a part of a public discourse of general and specific issues.

For example, many people have a strong urge to participate in the somewhat
20 public fora of chat rooms. Another example is Music Television (MTV), operating out of New York, New York, which has become popular at least somewhat because of young people's feelings of connection with the public presentation of video information. The show "Loveline," on MTV, for example, includes many interactive methods for callers to participate, including telephoning, video feeding, and Internet
25 communication. Yet another example is the phenomenon of public display of personal and public video tapes of amazing, silly, ridiculous, or humorous, injurious, or realistic events.

- 2 -

There are also classified advertisement and other sites for general information on networks, such as the Internet, but these types of sites are not generally of a multimedia nature and are typically very limited in subject matter.

Known multimedia and other patented systems include U.S. Patent No. 5,987,454, issued to Hobbs, which discloses a method and associated apparatus for accessing data warehouses containing records, such as text documents, financial or court records, medical files, graphical data, technical information, audio and video files or various combinations of such data. Also disclosed are user provided profiles and off-line browsing, as well as providing a web page containing text, audio, graphics, and video information with linked terms connected to current awareness and historical records from expert pre-selected data warehouses or single databases.

U.S. Patent No. 5,956,491, issued to Marks describes a group communications multiplexing system, in which a number of participants engage in real-time multimedia messaging or "chats," and provides permission features and multimedia uploading, including forwarding of messages to a universal resource location (URL). U.S. Patent No. 5,864,874, issued to Shapiro discloses a community co-presence system, in which multiple parties are able to communicate in real time over the Internet, as in a chatroom, with the additional feature that a data object, such as a document, may be retrieved by each participant and communicated to others for discussing the data object or, for example, modifying the object. U.S. Patent No. 5,799,151, issued to Hoffer discloses an interactive electronic trade network and user interface that integrates distributive messaging using a host computer and telecommunication networks, real-time interactive communications, a hierarchical knowledge matrix that includes classification of goods, and real-time interactive communications.

U.S. Patent No. 5,963,951, issued to Collins presents an on-line dating service, in which subscribers may update or change the information stored in the server database and perform searches specifying search criteria, such as age, gender, and goal preferences. U.S. Patent No. 5,978,768, issued to McGovern et al. shows a

- 3 -

computerized job search system and method for posting and searching job openings via the Internet.

U.S. Patent No. 5,963,916, issued to Kaplan discloses an on-line user-interactive multimedia based system, in which the user may preview samples of stored audio program products, video program products, and text from books or other written documents, and upload opinions and marketing information. U.S. Patent No. 6,006,201, issued to Berent et al. describes an on-line motor vehicle auction and information system, in which dealers may import their vehicle inventories, including video and text information into the system.

Two non-patent references of the prior art include the following. "TV on the Web", referenced at <http://www.tvontheweb.com> (1/10/00), shows on one of its pages a choice of host inputted speakers and information from which the end user can select. When selected, a video with audio plays; and "Real.com", referenced at <http://www.real.com> (1/10/00), includes reference to a product called "realpresenter plus G2," in which audio and video are added to Microsoft® PowerPoint® presentations for viewing at network site viewers' convenience.

In general, there remains a need to provide more methods and systems, especially flexible multimedia systems, for individuals to participate in public fora, especially networked based fora, such as the Internet. There is a further need for public fora for providing the capability to display, in a multimedia manner, information provided by individuals, including personal information; audio and video presentations; multimedia auctions, sales, and advertisements; multimedia chat rooms; artists and other exhibitors of creative works; matchmaking and dating services and related multimedia chat areas; newspaper information and radio and television broadcasts; teaching tools for remote classes; and medical information.

There is a further need for a broad forum for collecting and providing for retrieval of such publicly displayed information, categorizing, organizing, or otherwise departmentalizing the information, as well as methods and systems or capabilities for individuals to interact with the information provided, including

- 4 -

methods and systems for incorporating direct multimedia feed, such as video and audio feed in real time.

SUMMARY OF THE INVENTION

5 It is an advantage of the present invention to meet these needs, and others, by providing a network site for receiving, storing, and providing access in a virtually unlimited manner to a wide range of multimedia information provided by users. It is a further advantage of the present invention to provide for distinct departments for categorizing received multimedia information. It is a further advantage of the present
10 invention to provide the network site on the Internet or an intranet.

 It is another advantage of the present invention to provide capabilities for multimedia network chat rooms.

 It is another advantage of the present invention to provide departments that include one or more of personal information, such as personal or classified
15 advertisements; audio and video presentations, such as music recordings, professional service presentations, or demonstrations; multimedia auctions, sales, and advertisements; artists, including poets, writers, and other exhibitors of creative works; matchmaking and dating services and related multimedia chat areas; newspaper information and radio and television broadcasts; teaching tools for remote
20 classes; and medical information, such as doctor provided diagnosis and procedure information for patients.

 The present invention comprises a method and system for providing a multimedia forum on a network, such as the Internet or an intranet, for use for storing and accessing received user multimedia presentations. An embodiment of the present
25 invention allows users to provide a wide range of personal and other information for access and retrieval by other users in a single location. In one embodiment, the invention includes a networked site and associated database or databases for storing received user multimedia presentations in electronic or digital format, such as video presentations, text, files of data, images, and sound recordings. The stored

- 5 -

multimedia presentations are categorized, and user access is provided based on departments or other identifying information. In one embodiment, the submitting user selects the categories and identifying information for the presentations. In another embodiment, network site operators select the categories and identifying information, or the selection occurs automatically based on user input information. Examples of departments of the network site include personal information, such as personal or classified advertisements; audio and video presentations, such as music recordings, professional service presentations or demonstrations; multimedia auctions, sales, and advertisements; multimedia chat rooms; artists, including poets, writers, and other exhibitors of creative works; matchmaking and dating services and related multimedia chat areas; newspaper information and radio and television broadcasts; teaching tools for remote classes; and medical information, such as doctor provided diagnosis and procedure information for patients.

To achieve the stated and other advantages of the present invention, as embodied and described below, the invention includes a method for providing a departmentalized multimedia forum for user presentment of information on a network, comprising: providing a network site coupled to the network, the network site having access to a database for storing multimedia information; receiving at the network site at least one item of multimedia information from at least one user; categorizing the at least one item of received multimedia information, wherein the categorized at least one item of received multimedia information has an associated department; and providing user access to the at least one item of received multimedia information via the associated department.

To achieve the stated and other advantages of the present invention, as embodied and described below, the invention further includes a system for providing a departmentalized multimedia forum for user presentment of information on a network, comprising: a server having a database for storing multimedia information; and at least one terminal coupled to the server for providing user access to the database; wherein at least one item of multimedia information is received at the

- 6 -

network site from at least one user; wherein the at least one item of received multimedia information is categorized, the categorized at least one item of received multimedia information having an associated department; and wherein user access is provided to the at least one item of received multimedia information via the associated department.

Additional advantages and novel features of the invention will be set forth in part in the description that follows, considered in conjunction with the accompanying drawing figures, and in part will become more apparent to those skilled in the art upon examination of the following or upon learning by practice of the invention. It is to be understood, however, that the drawings are designed solely for the purposes of illustration and not as a definition of the limits of the invention.

BRIEF DESCRIPTION OF THE FIGURES

In the drawings:

FIG. 1 depicts an overview of the components of an embodiment of the present invention;

FIG. 2 presents a flow diagram of an example procedure for receiving a multimedia presentation for inclusion for access via a network site in accordance with an embodiment of the present invention;

FIG. 3 is a flow diagram of an example procedure for receiving a multimedia presentation for immediate access at a network site in accordance with an embodiment of the present invention; and

FIG. 4 shows is a block diagram of example network site components in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION

The present invention comprises a method and system for providing a multimedia forum on a network, such as the Internet or an intranet, for use for storing and accessing received user multimedia presentations. An embodiment of the present

- 7 -

invention includes a website that is identified, for example, as
"your15seconds.comTM" or "expressyourselves.comTM" to highlight the capabilities or
purpose of the site.

5 Information contained in departments includes a wide variety of types and
categories. For example, information stored and accessible includes visual letters or
other personal pieces of information, such as home videos, and personal or classified
advertisements of a multimedia nature.

10 The concept also includes related methods and systems for individual
interaction, such as multimedia interactive "shows." For example, the concept of a
talk show is extendable to the Internet, such that individuals are able to present
information, and then commenting individuals provide input in a multimedia manner,
such as by video transmission of a video or other multimedia feed or file.

15 In an embodiment of the present invention, audio and video or other
multimedia presentations or "demos" are presented in another portion of the site.
Thus, for example, a local band is able to record a session and place it in a library of
multimedia files for viewing, review, or comment by users accessing the file. The site
contains sufficient multimedia storage space to support libraries of, for example,
videos or audio records of several minutes for a determined number of demos.

20 Another section or department on the site provides for actor or other talent
presentations, such as standup comedy routines, video displays of models, or other
professional presentations.

25 Other example focus areas of the site include politics, religion, legal or courts,
and morality, polls and polling, and movies, with subsections for each. For example,
the political section is able to include a forum on the Executive Branch, in which
users submit comments or participate in multimedia debates or chats on the
President's job performance. The court or legal section allows users to voice their
opinions on, for example, the guilt or innocence of a defendant or make a case one
way or the other. The movie section presents a forum for critical opinion regarding
movies. The voicing of opinions occurs, for example, by the site prompting the users

- 8 -

to input their opinions, and then displaying the results of these inputs. For example, a running tally as to viewer's opinions of which party is the likely winning party in an ongoing video broadcast court case are displayed in realtime by receiving inputs from the viewers, and links are superimposedly presented for viewers to access video fed
5 comments.

Because of the interactive nature of the site, input such as opinions potentially affects other aspects of the site, such as polling, approaching real time. An embodiment of the present invention includes capability for receiving verbal or other sound inputs that are then convertible into polling or other results, for tracking, for
10 example, public opinion in real time.

Another aspect of the polling or opinion aspects of an embodiment of the present invention is the capability to receive real time opinions from specific locations or persons. For example, interviews conducted on campuses, on the street, or in bars are instantly transmittable to the site for presentation, allowing real time "visits" to
15 these locations and people at the locations by users. In addition, the nature of this feature is such that international locations are equally as instantly accessible as local locations, providing the visits or opinion collections with international relevance.

Another department relates, in general, to learning. In one embodiment, this section provides multimedia chat capability, as well as provision of information, by
20 teachers or others, by subject. For example, those seeking yoga instruction are able to identify a yoga teacher, download or view yoga videos or other presentations, and identify dates and times for real-time multimedia interaction on yoga. Other examples include teaching tools for remote classes, and providing medical information, such as doctor provided diagnosis and procedure information for patients.

25 In addition, the site permits posting of other reference sites, so that users are able to access or identify information at locations other than on the host site. For example, a user is able to post the location of a personal website.

Another department includes auctioned items that are displayed or otherwise presented in a multimedia manner. For example, one department includes a "yard

- 9 -

sale" feature, which allows presentation in a multimedia format, such as video, of eclectic items on sale by individuals or others. Similarly, for collections of items from multiple individuals, another aspect of this department is a "flea market." For example, a user selling in the flea market presents an item, such as an old rifle left to them by a relative, and asks via a video feed whether anyone would buy it and at what price. Other example items sold in this department include paintings or other artwork, lawn mowers or other yard implements, coins or coin collections, baseball cards, and other items particularly amenable to visual or multimedia presentation.

Yet another department includes newspaper and television and radio broadcast information, as permitted by the publishers of this information. For example, daily television and newspaper editorials from around the country are posted in one department. Radio broadcasts or shows, such as talk radio programs or call-in shows, are posted in another location.

Another department presents "Today's Controversial Topics." This feature allows each week's or day's topics to be presented and commented upon without the restrictions on comment that occur with presentation in other media. For example, for talk shows, only a limited number of callers can be heard. With the present invention, an unlimited number of comments are postable, subject only, for example, to the storage limits of the host database.

An embodiment of the present invention further includes imposition of a fee for participation or other gateway based control on user access. In another embodiment of the present invention, the site includes advertising within the site and focus areas, particularly focused advertising for those areas.

References will now be made in detail to embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

FIG. 1 depicts an overview of the components of an embodiment of the present invention. As shown in FIG. 1, a user 1, at a terminal 2, such as a personal computer, minicomputer, microcomputer, mainframe computer, or other device having a display and capability for providing browsing on a network, communicates via couplings 3, 5

- 10 -

and a network 6, such as the Internet or an intranet, with a server 9, such as a personal computer, minicomputer, microcomputer, mainframe computer, or other device having a processor and a database or coupling to a database for storing and accessing received multimedia information. The couplings 3, 5 may include, for example,
5 wired, wireless, or fiberoptic communication links. Optionally, the terminal 2, includes one or more attached video input devices 10 and audio input devices 11 for inputting multimedia information.

FIG. 2 presents a flow diagram of an example procedure for receiving a multimedia presentation for inclusion for access via a network site in accordance with
10 an embodiment of the present invention. As shown in FIG. 2, a user inputs a multimedia presentation at a local terminal 20, such as providing an audio or video feed or by inputting an electronic or digital file containing multimedia information. The user then accesses the multimedia forum site 21, such as by using a browser at a terminal to access a website housed on a server on a network, such as the Internet or
15 an intranet. Optionally, the user is identified by the site 22, such as by providing identifying information, such as a user name, or a password.

The user then transmits the multimedia presentation to the site and optionally provides reference information regarding the presentation 23. In one embodiment, the presentation is then reviewed or otherwise confirmed 24, and the presentation is then
20 referenced and placed in a selected forum 25, such a department of the website. In one embodiment, the user selects the department and adds any reference information. In another embodiment, the selection of the department and additional of reference information is completed by, for example, system operators accessing the server hosting the network site, or completed automatically depending on the user inputted
25 information.

FIG. 3 is a flow diagram of an example procedure for receiving a multimedia presentation for immediate access at a network site in accordance with an embodiment of the present invention. This procedure is especially applicable to, for example, multimedia chat rooms. As shown in FIG. 3, the user accesses the multimedia forum

- 11 -

network site chat department, for example, optionally via a secure gateway 30. The user then inputs a multimedia presentation at the user's terminal 31. Optionally, the user is identified by the site 32 prior to acceptance of the presentation. The user then transmits the multimedia presentation to the network site, and the presentation is made
5 immediately available for retrieval or viewing by users 33. Optionally, the user selects and addressable user within the chat room for receiving the presentation.

FIG. 4 shows is a block diagram of example network site components in accordance with an embodiment of the present invention. As shown in FIG. 4, the site components optionally include a site gateway 40, a general site or library area 41,
10 such as a home page on a network, such as the Internet or an intranet, and optionally gateways 42 to one or more of departments 43. The departments include, for example, personal information, such as personal or classified advertisements; audio and video presentations, such as music recordings, professional service presentations, or demonstrations; multimedia auctions, sales, and advertisements; and multimedia
15 chat rooms.

Thus, while there have been shown, described, and pointed out fundamental novel features of the invention as applied to embodiments thereof, it will be understood that various omissions, substitutions, and changes in the form and the details of the disclosed invention may be made by those skilled in the art without
20 departing from the spirit of the invention.

- 12 -

CLAIMS:

- 1 1. A method for providing a departmentalized multimedia forum for user
2 presentment of information on a network, comprising:
3 providing a network site coupled to the network, the network site having a
4 database for storing multimedia information;
5 receiving at the network site at least one item of multimedia information from
6 at least one user;
7 categorizing the at least one item of received multimedia information, wherein
8 the categorized at least one item of received multimedia information has an associated
9 department; and
10 providing user access to the at least one item of received multimedia
11 information via the associated department.
- 1 2. The method of claim 1, wherein the associated department comprises a
2 chat room.
- 1 3. The method of claim 2, further comprising:
2 immediately presenting for user access the received at least one item of
3 multimedia information for the chat room.
- 1 4. The method of claim 3, further comprising:
2 providing a gateway for each browsing user of the chat room.
- 1 5. The method of claim 1, wherein the associated department comprises
2 one selected from a group consisting of an electronic flea market, music videos, a
3 multimedia auction, personal information, classified advertisements, audio
4 presentations, video presentations, professional service presentations, and teaching
5 tools for remote classes.

- 13 -

1 6. The method of claim 1, wherein the associated department comprises
2 medical information.

1 7. The method of claim 6, wherein the medical information includes
2 diagnosis information for a patient.

1 8. The method of claim 6, wherein the medical information includes
2 procedure information for a patient.

1 9. The method of claim 1, wherein the associated department includes
2 opinion polling of accessing users.

1 10. The method of claim 9, further comprising:
2 identifying the accessing users;
3 prompting the accessing users for opinion input from each of the accessing
4 users;
5 receiving the opinion input from each of the accessing users providing the
6 opinion input; and
7 displaying a running result of the opinion input.

1 11. The method of claim 10, wherein the running result comprises poll
2 percentages.

1 12. The method of claim 1, further comprising:
2 providing a security gateway for access to the network site.

1 13. The method of claim 12, further comprising:
2 prompting a user to provide identification information and a password; and

- 14 -

3 receiving the user provided identification information and the password prior
4 to providing access to the network site.

1 14. The method of claim 1, wherein receiving at the network site at least
2 one item of multimedia information from at least one user further comprises:
3 receiving a video feed from the at least one user.

1 15. The method of claim 1, wherein receiving at the network site at least
2 one item of multimedia information from at least one user further comprises:
3 receiving an audio feed from the at least one user.

1 16. The method of claim 1, wherein receiving at the network site at least
2 one item of multimedia information from at least one user further comprises:
3 receiving an electronic file from the at least one user.

1 17. The method of claim 1, wherein receiving at the network site at least
2 one item of multimedia information from at least one user further comprises:
3 receiving a digital file from the at least one user.

1 18. A system for providing a departmentalized multimedia forum for user
2 presentment of information on a network, comprising:
3 a server having access to a database for storing multimedia information; and
4 at least one terminal coupled to the server for providing user access to the
5 database;
6 wherein at least one item of multimedia information is received at the server
7 from at least one user; wherein the at least one item of received multimedia
8 information is categorized, the categorized at least one item of received multimedia
9 information having an associated department; and wherein user access is provided to

- 15 -

10 the at least one item of received multimedia information via the associated
11 department.

1 19. The system of claim 18, wherein the at least one terminal and the server
2 are coupled via a coupling.

1 20. The system of claim 19, wherein the coupling comprises one from a
2 group consisting of a wired connection, a wireless connection, and a fiberoptic
3 connection.

1 21. The system of claim 18, wherein the at least one terminal comprises one
2 selected from a group consisting of a personal computer, a minicomputer, a
3 microcomputer, a main frame computer, and a telephone device.

1 22. The system of claim 18, wherein the server comprises one selected
2 from a group consisting of a personal computer, a minicomputer, a microcomputer,
3 and a main frame computer.

1 23. The system of claim 18, wherein the server comprises a storage device,
2 the storage device including the accessible database.

1 24. The system of claim 18, further comprising:
2 a database server coupled to the server, the database server comprising a
3 storage device, wherein the storage device includes the accessible database.

1 25. The system of claim 18, wherein the network is the Internet.

1 26. A system for providing a departmentalized multimedia forum for user
2 presentment of information on a network, comprising:

- 16 -

3 means for providing a network site coupled to the network, the network site
4 having a database for storing multimedia information;
5 means for receiving at the network site at least one item of multimedia
6 information from at least one user;
7 means for categorizing the at least one item of received multimedia
8 information, wherein the categorized at least one item of received multimedia
9 information has an associated department; and
10 means for providing user access to the at least one item of received multimedia
11 information via the associated department.

1/4

FIG. 1

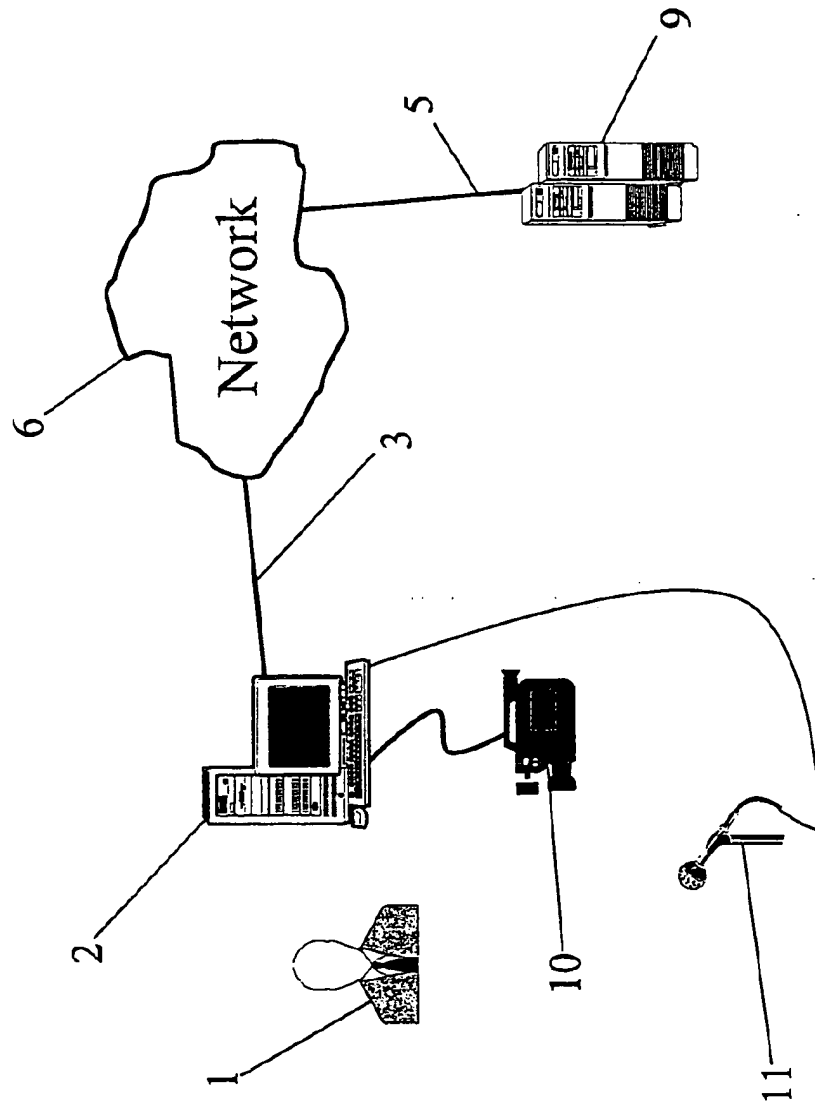


FIG. 2

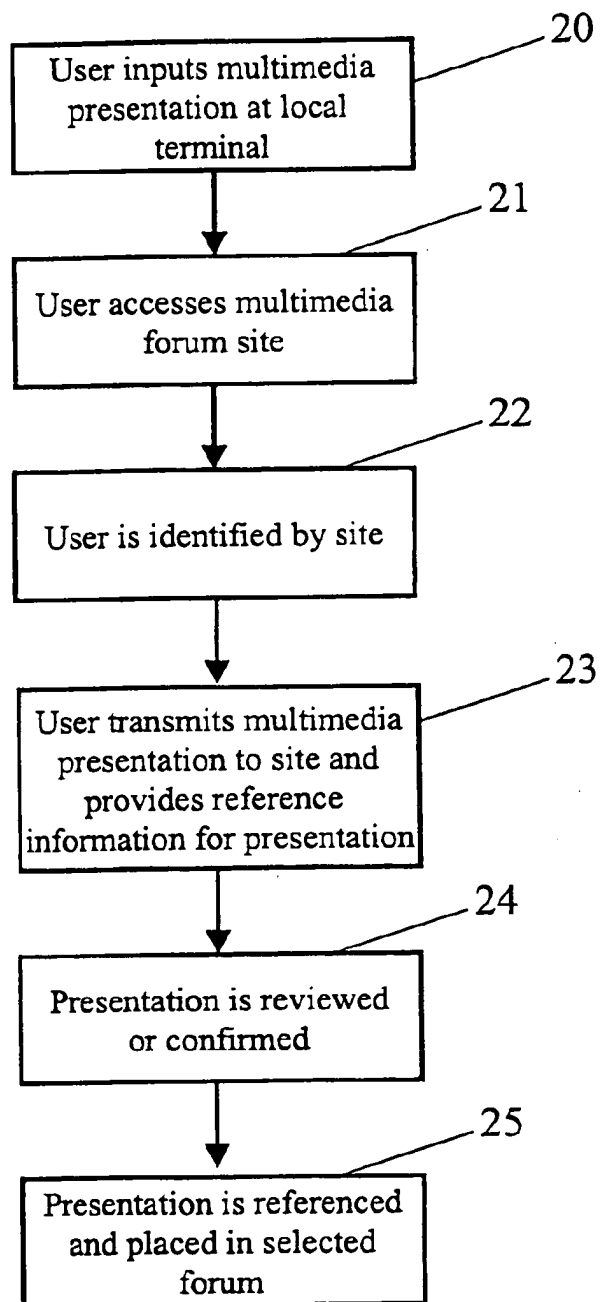
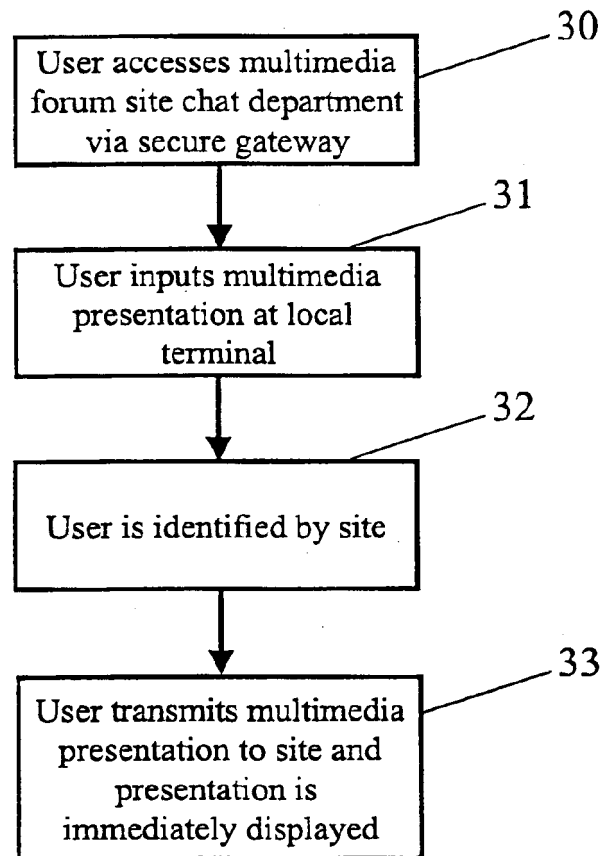
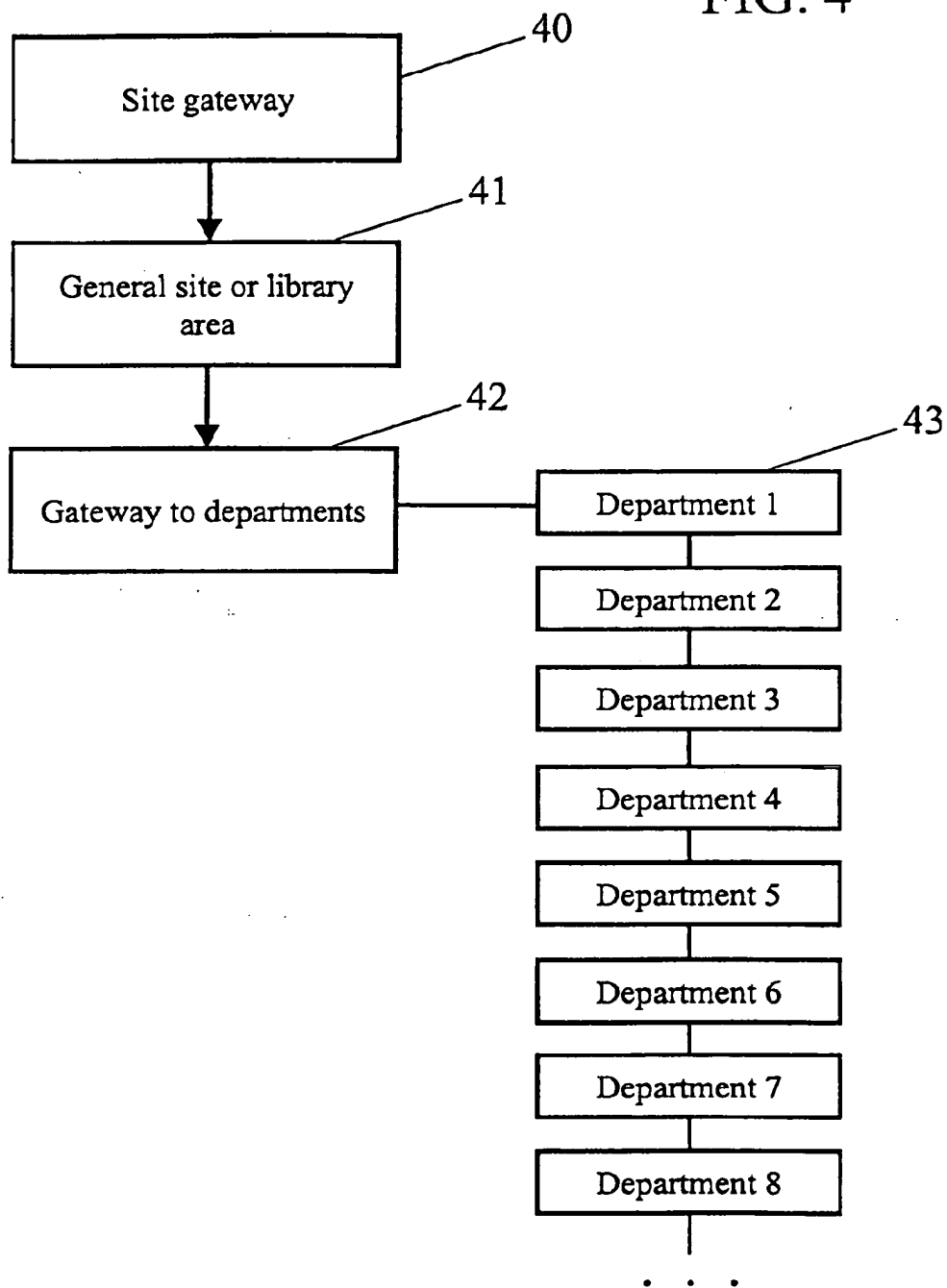


FIG. 3



4/4

FIG. 4



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/28070

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 13/00, 17/30, 17/60

US CL : 705/1, 14, 26, 27, 35, 36, 37:707/2, 10: 709/204, 218, 219

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/1, 14, 26, 27, 35, 36, 37:707/2, 10: 709/204

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y, P	US 6,035,294 A (FISH) 07 MARCH 2000, COL.1-10.	1-26
Y, E	US 6,151,589 A (AGGARWAL ET AL.) 21 NOVEMBER 2000, COL.2-6.	1-26
Y	US 5,963,916 A (KAPLAN) 05 OCTOBER 1999, COL.4-18.	1-26
A, P	US 6,073,170 A (SUMITA ET AL.) 06 JUNE 2000, COL.3-11.	1-26

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*G* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

03 DECEMBER 2000

Date of mailing of the international search report

25 JAN 2001

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

GLEN BURGESS

Telephone No. (703) 305-4792

Peggy Hanod